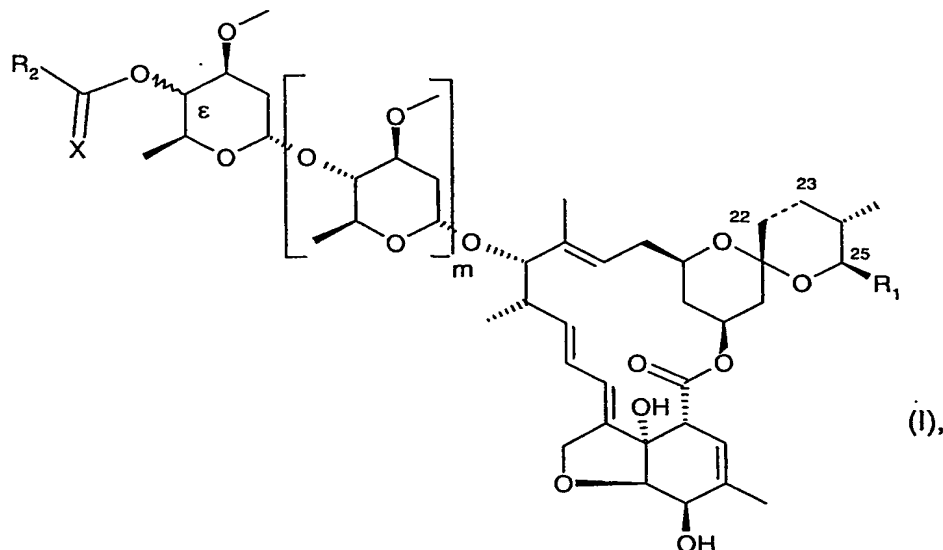


## CLAIMS

1. A compound of the formula



5 wherein the bond between carbon atoms 22 and 23 is a single or double bond;

**m** is 0 or 1;

R<sub>1</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl or C<sub>2</sub>-C<sub>12</sub>alkenyl; and either

(A)  $R_2$  is  $-N(R_3)R_4$ , and

(1) X is O, wherein

10 R<sub>3</sub> is hydrogen, unsubstituted or mono- to pentasubstituted C<sub>1</sub>-C<sub>12</sub>alkyl, unsubstituted or mono- to pentasubstituted C<sub>3</sub>-C<sub>12</sub>cycloalkyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkenyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkynyl, aryl or heterocyclyl, and

15  $R_4$  is mono- to pentasubstituted  $C_1$ - $C_{12}$ alkyl, unsubstituted or mono- to pentasubstituted  $C_3$ - $C_{12}$ cycloalkyl, unsubstituted or mono- to pentasubstituted  $C_2$ - $C_{12}$ alkenyl, unsubstituted or mono- to pentasubstituted  $C_2$ - $C_{12}$ alkynyl, unsubstituted and mono- to trisubstituted heterocyclyl, unsubstituted and mono- to pentasubstituted aryl,  $NH_2$ ,  $NHC_1$ - $C_{12}$ alkyl,  $N(C_1$ - $C_{12}$ alkyl) $_2$ ,  $C_1$ - $C_6$ alkyl- $N(C_1$ - $C_{12}$ alkyl) $_2$ ,  $-C_1$ - $C_6$ alkyl- $N^+(C_1$ - $C_{12}$ alkyl) $_3$ ,  
20  $SO_2NH_2$ ,  $SO_2NHC_6H_5$ ,  $SO_2$ Phenyl,  $SO_2$ Benzyl,  $OH$ ,  $-OC_1$ - $C_{12}$ alkyl,  $-OC_1$ - $C_{12}$ alkenyl or  $-OC_1$ - $C_{12}$ alkynyl; or

(2) X is S, wherein

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R<sub>3</sub> is hydrogen, unsubstituted or mono- to pentasubstituted C<sub>1</sub>-C<sub>12</sub>alkyl, unsubstituted or mono- to pentasubstituted C<sub>3</sub>-C<sub>12</sub>cycloalkyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkenyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkynyl; aryl or heterocyclyl, and

5 R<sub>4</sub> is hydrogen, unsubstituted or mono- to pentasubstituted C<sub>1</sub>-C<sub>12</sub>alkyl, unsubstituted or mono- to pentasubstituted C<sub>3</sub>-C<sub>12</sub>cycloalkyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkenyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkynyl, unsubstituted and mono- to trisubstituted heterocyclyl, unsubstituted and mono- to pentasubstituted aryl, NH<sub>2</sub>,  
 10 NHC<sub>1</sub>-C<sub>12</sub>alkyl, N(C<sub>1</sub>-C<sub>12</sub>alkyl)<sub>2</sub>, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>NHC<sub>6</sub>H<sub>5</sub>, SO<sub>2</sub>Phenyl, SO<sub>2</sub>Benzyl, OH or -OC<sub>1</sub>-C<sub>12</sub>alkyl; or

(3) X is O or S, wherein R<sub>3</sub> and R<sub>4</sub> together are a three- to seven-membered alkylene or a four- to seven-membered alkenylene bridge, in which a CH<sub>2</sub> group may be replaced by O, S, C=O or NR<sub>6</sub>; or

15 (B) R<sub>2</sub> is OR<sub>5</sub> and X is O or S, wherein R<sub>5</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, mono- to pentasubstituted C<sub>1</sub>-C<sub>12</sub>alkyl, unsubstituted or mono- to pentasubstituted C<sub>3</sub>-C<sub>12</sub>cycloalkyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkenyl, unsubstituted or mono- to pentasubstituted C<sub>2</sub>-C<sub>12</sub>alkynyl;

in which the substituents of the alkyl-, alkenyl-, alkynyl-, alkylene-, alkenylene-,  
 20 heterocyclyl-, aryl- and cycloalkyl-radicals mentioned under R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are selected from the group consisting of OH, halogen, halo-C<sub>1</sub>-C<sub>2</sub>alkyl, CN, SCN, NO<sub>2</sub>, C<sub>2</sub>-C<sub>6</sub>alkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl which is unsubstituted or substituted by one to three methyl groups; norbornylenyl; C<sub>3</sub>-C<sub>8</sub>cycloalkenyl which is unsubstituted or substituted by one to three methyl groups; C<sub>3</sub>-C<sub>8</sub>halocycloalkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>alkoxyC<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>cycloalkoxy, C<sub>1</sub>-C<sub>12</sub>alkylthio, C<sub>3</sub>-C<sub>8</sub>cycloalkylthio, C<sub>1</sub>-C<sub>12</sub>haloalkylthio, C<sub>1</sub>-C<sub>12</sub>alkylsulfanyl, C<sub>3</sub>-  
 25 C<sub>8</sub>cycloalkylsulfanyl, C<sub>1</sub>-C<sub>12</sub>haloalkylsulfanyl, C<sub>3</sub>-C<sub>8</sub>halocycloalkylsulfanyl, C<sub>1</sub>-C<sub>12</sub>alkylsulfonyl, C<sub>3</sub>-C<sub>8</sub>cycloalkylsulfonyl, C<sub>1</sub>-C<sub>12</sub>haloalkylsulfonyl, C<sub>3</sub>-C<sub>8</sub>halocycloalkylsulfonyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, -N(R<sub>6</sub>)<sub>2</sub>, wherein the two R<sub>6</sub> are independent of each other; -C(=O)R<sub>7</sub>, -O-C(=O)R<sub>8</sub>, -NHC(=O)R<sub>7</sub>, -S-C(=S)R<sub>8</sub>, -P(=O)(OC<sub>1</sub>-C<sub>6</sub>alkyl)<sub>2</sub>, -S(=O)<sub>2</sub>R<sub>11</sub>; -NH-S(=O)<sub>2</sub>R<sub>11</sub>,  
 30 -OC(=O)-C<sub>1</sub>-C<sub>6</sub>alkyl-S(=O)<sub>2</sub>R<sub>11</sub>; aryl, benzyl, heterocyclyl, aryloxy, benzyloxy, heterocyclyloxy, arylthio, benzylthio, heterocyclylthio; and also aryl, heterocyclyl, aryloxy, benzyloxy, heterocyclyloxy, arylthio, benzylthio or heterocyclylthio which, depending on the possibilities of substitution on the ring, are mono- to pentasubstituted by substituents selected from the group consisting of OH, halogen, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>1</sub>-C<sub>12</sub>haloalkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>haloalkoxy, C<sub>1</sub>-C<sub>12</sub>alkylthio, C<sub>1</sub>-C<sub>12</sub>haloalkylthio,

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C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkyl, dimethylamino-C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, phenoxy, phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl, methylenedioxy, -C(=O)R<sub>7</sub>, -O-C(=O)-R<sub>8</sub>, -NH-C(=O)R<sub>8</sub>, -N(R<sub>10</sub>)<sub>2</sub>, wherein the two R<sub>10</sub> are independent of each other; C<sub>1</sub>-C<sub>6</sub>alkylsulfinyl, C<sub>3</sub>-C<sub>8</sub>cycloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>haloalkylsulfinyl, C<sub>3</sub>-C<sub>8</sub>halocycloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>alkylsulfonyl, C<sub>3</sub>-C<sub>8</sub>cycloalkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>haloalkylsulfonyl and C<sub>3</sub>-C<sub>8</sub>halocycloalkylsulfonyl;

R<sub>6</sub> is H, C<sub>1</sub>-C<sub>8</sub>alkyl, hydroxy-C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, phenyl, benzyl, -C(=O)R<sub>7</sub>, or -CH<sub>2</sub>-C(=O)-R<sub>7</sub>;

R<sub>7</sub> is H, OH, SH, -N(R<sub>10</sub>)<sub>2</sub>, wherein the two R<sub>10</sub> are independent of each other; C<sub>1</sub>-C<sub>24</sub>alkyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, C<sub>1</sub>-C<sub>8</sub>hydroxyalkyl, C<sub>1</sub>-C<sub>12</sub>haloalkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>haloalkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkylthio, C<sub>2</sub>-C<sub>8</sub>alkenyloxy, C<sub>2</sub>-C<sub>8</sub>alkynyloxy, NH-C<sub>1</sub>-C<sub>6</sub>alkyl-C(=O)R<sub>9</sub>, -N(C<sub>1</sub>-C<sub>6</sub>alkyl)-C<sub>1</sub>-C<sub>6</sub>alkyl-C(=O)-R<sub>9</sub>, -O-C<sub>1</sub>-C<sub>2</sub>alkyl-C(=O)-R<sub>9</sub>, -C<sub>1</sub>-C<sub>6</sub>alkyl-S(=O)<sub>2</sub>R<sub>9</sub>; aryl, benzyl, heterocyclyl, aryloxy, benzyloxy, heterocyclyloxy; or aryl, benzyl, heterocyclyl, aryloxy, benzyloxy or heterocyclyloxy, which are unsubstituted or mono- to trisubstituted in the ring independently of one another by halogen, nitro, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkyl or C<sub>1</sub>-C<sub>6</sub>haloalkoxy;

R<sub>8</sub> is H, C<sub>1</sub>-C<sub>24</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>haloalkyl, C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkyl, N(R<sub>10</sub>)<sub>2</sub>, wherein the two R<sub>10</sub> are independent of each other; -C<sub>1</sub>-C<sub>6</sub>alkyl-C(=O)R<sub>10</sub>, -C<sub>1</sub>-C<sub>6</sub>alkyl-S(=O)<sub>2</sub>R<sub>9</sub>, aryl, benzyl, heterocyclyl; or aryl, benzyl or heterocyclyl which, depending on the possibilities of substitution on the ring, are mono- to trisubstituted by substituents selected from the group consisting of OH, halogen, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>haloalkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>haloalkoxy, C<sub>1</sub>-C<sub>12</sub>alkylthio and C<sub>1</sub>-C<sub>12</sub>haloalkylthio;

R<sub>9</sub> is H, OH, C<sub>1</sub>-C<sub>24</sub>alkyl which is optionally substituted with OH, or -S(=O)<sub>2</sub>-C<sub>1</sub>-C<sub>6</sub>alkyl; C<sub>1</sub>-C<sub>12</sub>alkenyl, C<sub>1</sub>-C<sub>12</sub>alkynyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>2</sub>-C<sub>8</sub>alkenyloxy, aryl, aryloxy, benzyloxy, heterocyclyl, heterocyclyloxy or -N(R<sub>10</sub>)<sub>2</sub>, wherein the two R<sub>10</sub> are independent of each other;

R<sub>10</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkyl, which is optionally substituted with one to five substituents selected from the group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>alkoxy, hydroxy and cyano; C<sub>1</sub>-C<sub>8</sub>-cycloalkyl, aryl, benzyl, heterocyclyl; or aryl, benzyl or heterocyclyl, which, depending on the possibilities of substitution on the ring, are mono- to trisubstituted by substituents selected from the group consisting of OH, halogen, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>haloalkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>haloalkoxy, C<sub>1</sub>-C<sub>12</sub>alkylthio and C<sub>1</sub>-C<sub>12</sub>haloalkylthio;

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or, if appropriate, an E/Z isomer, E/Z isomer mixture and/or tautomer thereof, in each case in free form or in salt form.

2. A pesticide composition which contains at least one compound of the formula (I) as described in claim 1 as active compound and at least one auxiliary.

5        3. A method for controlling pests wherein a composition as defined in claim 2 is applied to the pests or their habitat.

4. A process for preparing a composition as defined in claim 2 which contains at least one auxiliary, wherein the active compound is mixed intimately and/or ground with the auxiliary(s).

10       5. The use of a compound of the formula (I) as defined in claim 1 for preparing a composition as defined in claim 2.

6. The use of a composition as defined in claim 2 for controlling pests.

7. A method for protecting plant propagation material against damage by a pest, wherein the propagation material or the location where the propagation material is planted is  
15       treated with a composition as defined in claim 2.

8. Plant propagation material treated in accordance with the method defined in claim 7.